

|  |                |                      |   |                            |  |   |                  |         |                         |                          |
|--|----------------|----------------------|---|----------------------------|--|---|------------------|---------|-------------------------|--------------------------|
| <b>EPA</b><br>United States Environmental Protection Agency<br>Washington, DC 20460<br><b>Work Assignment</b>  |                |                      |   |                            |  | Work Assignment Number<br>1-07  |                  |         |                         |                          |
|  |                |                      |   |                            |  | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: |                  |         |                         |                          |
| Contract Number<br>EP-D-11-006   |                |                      | Contract Period   04/29/2011   To   03/28/2012<br>Base <input checked="" type="checkbox"/> Option Period Number |                            |  | Title of Work Assignment/SF Site Name<br>Source Emissions Test Methods    |                  |         |                         |                          |
| Contractor<br>EASTERN RESEARCH GROUP, INC.   |                |                      |   |                            | Specify Section and paragraph of Contract SOW<br>I |   |                  |         |                         |                          |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out<br><input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding<br><input type="checkbox"/> Work Plan Approval        |                |                      |   |                            |  | Period of Performance<br><br>From   09/07/2011   To   03/28/2012          |                  |         |                         |                          |
| Comments:<br>This work assignment includes 150 hours for preparation of the work plan and to begin work on the work assignment.<br>This work does not unnecessarily duplicate any work previously performed or currently being performed.                                |                |                      |   |                            |  |   |                  |         |                         |                          |
| <input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund   |                |                      |   |                            |  |   |                  |         |                         |                          |
| Note: To report additional accounting and appropriations data use EPA Form 1900-69A.   |                |                      |   |                            |  |   |                  |         |                         |                          |
| SFO <input type="checkbox"/><br>(Max 2)  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Line   | DCN<br>(Max 6) | Budget/FY<br>(Max 4) | Appropriation<br>Code (Max 6)   | Budget Org/Code<br>(Max 7) | Program Element<br>(Max 9)                         | Object Class<br>(Max 4)   | Amount (Dollars) | (Cents) | Site/Project<br>(Max 8) | Cost Org/Code<br>(Max 7) |
| 1  |                |                      |   |                            |  |   |                  |         |                         |                          |
| 2  |                |                      |   |                            |  |   |                  |         |                         |                          |
| 3  |                |                      |   |                            |  |   |                  |         |                         |                          |
| 4  |                |                      |   |                            |  |   |                  |         |                         |                          |
| 5  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Authorized Work Assignment Ceiling   |                |                      |   |                            |  |   |                  |         |                         |                          |
| Contract Period:   |                | Cost/Fee:            |   |                            |  | LOE: 0  |                  |         |                         |                          |
| 04/29/2011 To 03/28/2012   |                |                      |   |                            |  |   |                  |         |                         |                          |
| This Action:   |                |                      |   |                            |  | 150   |                  |         |                         |                          |
|  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Total:   |                |                      |   |                            |  | 150   |                  |         |                         |                          |
| Work Plan / Cost Estimate Approvals  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Contractor WP Dated:   |                |                      |   | Cost/Fee:                  |  | LOE:  |                  |         |                         |                          |
|  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Cumulative Approved:   |                |                      |   | Cost/Fee:                  |  | LOE:  |                  |         |                         |                          |
|  |                |                      |   |                            |  |   |                  |         |                         |                          |
| Work Assignment Manager Name   Jason Dewees<br><br><div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>    |                |                      |   |                            |  | Branch/Mail Code:<br>Phone Number   919-541-9724<br>FAX Number:           |                  |         |                         |                          |
| Project Officer Name   Margaret Dougherty<br><br><div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>      |                |                      |   |                            |  | Branch/Mail Code:<br>Phone Number: 919-541-2344<br>FAX Number:            |                  |         |                         |                          |
| Other Agency Official Name<br><br><div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>                     |                |                      |   |                            |  | Branch/Mail Code:<br>Phone Number:<br>FAX Number:                         |                  |         |                         |                          |
| Contracting Official Name   Rodney-Daryl Jones<br><br><div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div> |                |                      |   |                            |  | Branch/Mail Code:<br>Phone Number: 919-541-3112<br>FAX Number:            |                  |         |                         |                          |

## **Statement of Work**

- I. Title: Support for Source Emissions Test Methods**  
**Contractor Name: ERG**  
**Contract #: EP-D-11-006**  
**WA #: 1-07**

**II. CONTRACTING OFFICER REPRESENTATIVE**

Jason M DeWees  
U.S. EPA  
Office of Air Quality Planning and Standards  
Air Quality Assessment Division  
Measurement Technology Group (E141-03)  
Research Triangle Park, NC 27711

**III. BACKGROUND**

The Clean Air Act (CAA) establishes a national framework for air quality management in the United States. The 1990 amendments to the CAA, while leaving intact the basic structure of this program, mandated both new Federal programs for controlling air pollution and major philosophical changes in some of the existing programs. Notable new programs were the addition of a technology-based approach for controlling air toxics under Title III, the Title IV requirements for the reduction in acid deposition, and the addition of a federally mandated operating permits program under Title V.

The work to be performed under work assignment supports to the U.S. Environmental Protection Agency (EPA), Office of Air Quality Planning and Standards (OAQPS) developing emissions standards for new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAP) for source categories and developing standardized prescriptive procedures to characterize emissions from a wide spectrum of controlled and uncontrolled sources (also known as source characterization) and to develop, evaluate and promote compliance assurance monitoring methods.

As part of effort under this work assignment the contactor may evaluate alternative test methods and monitoring procedures, develop and promote the proper and consistent application of stationary source and ambient air emissions test and monitoring methods in the development and enforcement of emissions control programs nationally, and develop, evaluate, and demonstrate new emissions measurement technology.

**IV. TASKS**

Task 1 of this work assignment involves support for regulatory development of measurement procedures for Hazardous Air Pollutants. The goal is to limit risks to the public from exposure to 188 Hazardous air Pollutants (HAPs) that are listed in the CAA. The maximum achievable control technology (MACT) standards have been published for almost all source categories. EPA continues to revise MACT standards and to include residual risk standards which are designed to reduce any unacceptable public health risks from major sources. Stationary facilities including

refineries and chemical industries include both ducted sources and area or fugitive sources that contribute to the mixture of toxic air pollutants found in urban air sheds. The focus of Task 1 is evaluation of a method to measure fugitive and area source emissions at facility fencelines.

#### Task 1 Management and Workplan

The Contractor shall initiate and coordinate the technical activities of the staff assigned to this project. The contractor shall prepare a work plan describing the technical approach for each of the tasks in this work assignment. In addition, the contractor shall provide a cost and labor estimate for the total work assignment and the cost and labor required to complete each of the work assignment tasks. The contractor shall plan for monthly technical conference calls to brief the WAM and EPA team on progress or issues to complete each task. The Contractor shall provide monthly reports to the EPA contracting officer representative (COR) for this work assignment (WA). Monthly progress reports are required by the contract deliverables and must contain a summary of technical progress and work assignment resource use (labor and cost) information as required by the contract.

#### Task 1 Deliverables:

1. Work Plan
2. Monthly Progress Reports

#### Task 2 QAPP Review

The contractor shall review and comment on an EPA provided QAPP covering sorbent tube preparation, passive sorbent tube sample collection to measure benzene exposure and round robin laboratory analysis of sorbent tube samples. A Quality Assurance Project Plan (QAPP) shall be prepared and provided by EPA covering all the operations necessary to conduct a study to assess the ability of commercial laboratories to follow Draft Method XX and analyzes passive sorbent tube samples for benzene; these operations will include sorbent tube preparation, sorbent tube benzene exposure, and a round robin lab analysis. The contractor shall be mainly responsible for task associated with the round robin analysis as described in more detail below. The contractor shall provide the summary of comments in word using the track changes and comments features in Microsoft Word.

#### Task 2 Deliverables:

1. Review comments and recommendations of project QAPP.

#### Task 3 Laboratory Survey

Contractor shall identify no more than 9 North American commercial environmental laboratories capable of the analysis procedure provided under Task 2. Contractor shall provide a letter report and table describing how many laboratories are able to perform the sorbent tube preparation and the sample analysis described in Draft Method XX. The report must contain but is not limited to:

- Legal Name and address of available laboratories,
- a description of the laboratory equipment used for this method,
- the analysis capacity in samples per day,
- the estimated detection limit (ug/tube) for each compounds.
- cost per tube preparation including the cost of media,

- cost per sample for analysis of a single component, (i.e., benzene) and
- cost per tube for analysis of a comprehensive list of air toxics such as found Table X of Draft Method XX

Task 3 deliverables:

1. Contractor shall provide a letter report and table describing how many laboratories are able to perform the sorbent tube preparation and the sample analysis described in Draft Method XX.

#### Task 4 Laboratory Round Robin

Contractor shall provide round robin analysis support of approximately 45 sorbent tubes for benzene. The benzene tube analysis will be done by a minimum of 3 laboratories (if available) to assess the method performance of Draft Method XX.

EPA will provide clean conditioned sorbent tubes for this Task. EPA will provide prepared passive sorbent tube blanks, mid and high level spikes and “Other” ambient concentration tubes for Contractor shipment to analysis laboratories. The contractor shall collect the ambient exposure round robin samples (9 tubes for the ambient benzene concentration level). The contractor shall be responsible for shipment and return of sorbent tubes.

The contractor shall also provide a clean evacuated canister and veriflow or equivalent sampling system and collect a TO-15 sample collected at ambient concentration simultaneous with the exposure of the ambient passive sorbent tubes. Contractor shall analyze this canister sample within 30 days of collection for benzene following the Contractors SOP for method TO-15.

The contractor shall also supply clean evacuated SUMMA canisters and veriflow or equivalent sampling systems for mid and high level sample collection by EPA. Contractor shall analyze these 2 canisters samples for benzene within 30 days of collection following the Contractors SOP for method TO-15.

The laboratories should provide full laboratory narratives with raw data and excel summaries. Laboratory narratives should include any comments, suggestions or request for clarification of the Draft Method XX. Contractor shall provide a letter report with a summary of the lab results and delivery of all raw and electronically available data.

The round robin experimental matrix will include 3 replicates of the sample type. EPA anticipates shipping two types of samples in shipment batch 1 and 2 for a total of 6 samples per laboratory per shipment and one batch in shipment batch 3 as shown in Table 1. These sample types correspond to zero, ambient, mid-spiked, high-spiked and “other.” Laboratories must follow Draft Method XX and report any deviations that are customary or required for their laboratory to complete the analysis.

The contractor shall summarize the results of the round robin tests in a letter report that shall include, but not be limited to:

- A narrative that describes the experimental design and samples supplied for the round robin laboratory tests.
- A table summarizing the laboratory results for all samples and:
  - The average value for replicate samples supplied to each laboratory.
  - The precision demonstrated by each laboratory as measured by the standard deviation of three analyses of each sample type,
  - The bias for mid and high level spiked sample analysis as compared to the canister analysis performed by the contractor and,
  - The accuracy of the mid and high level spiked sample analysis as compared to the known spike concentration supplied by EPA.
- An appendix with the original round robin laboratory test results including raw and electronic data from each analysis batch,
- An appendix containing the contractors TO-15 analysis raw results

#### Task 4 deliverables

1. A letter report summarizing the results of the round robin laboratory analyses as described required for Task 4.

Table 1. Shipping and experimental matrix for passive sorbent laboratory evaluation

| Batch    |   | <b>EPA</b>   | <b>Contractor</b>  | <b>Laboratory A</b>       | <b>Laboratory B</b>       | <b>Laboratory C</b>       |
|----------|---|--|--|---------------------------|---------------------------|---------------------------|
| <b>1</b> | <b>Zero (Blank)</b>   | Supplies Tubes to Contractor                           | Supplies Tubes to laboratories A,B,C.  | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| <b>1</b> | <b>Mid range spike exposed sample (~1 ppb)</b>                            | Supplies Tubes to Contractor.<br>Collects TO-15 Sample | TO-15 sample equipment to EPA, TO-15 analysis.<br>Ships tubes to laboratories A,B,C. | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| <b>2</b> | <b>Ambient exposed sample (Contractor field collection)</b>               | Supplies Tubes to Contractor                           | TO-15 and tube sampling and TO-15 analysis.<br>Ships tubes to laboratories A,B,C.    | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| <b>2</b> | <b>High Range Spike exposed sample (~5ppb)</b>                            | Supplies Tubes to Contractor.<br>Collects TO-15 Sample | TO-15 sample equipment to EPA, TO-15 analysis.<br>Ships tubes to laboratories A,B,C. | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| <b>3</b> | <b>Other exposed sample (EPA field collection, unknown concentration)</b> | Supplies Tubes to Contractor.<br>Collects TO-15 Sample | Ships tubes to laboratories A,B,C.   | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |

**V. SCHEDULE OF DELIVERABLES**

| Task | Activity  | Date  | Comments |
|------|---|---|----------|
| 1    | Work Plan<br><br>Provide Monthly Progress Reports   | Within 20 days of effective date of work assignment<br><br>By the 15 <sup>th</sup> of the following month | NA       |
| 2    | Review and comment on EPA provided QAPP   | 2 weeks after receipt of QAPP   |          |
| 3    | Letter report summarizing available labs for passive sorbent tube analysis.   | 4 weeks after completion of work plan   |          |
| 4    | A letter report and appendices summarizing the results of the round robin laboratory analyses as described required for Task 4. | 2 weeks after receipt of final analyses from round robin laboratories.                                    |          |

|   |                |                      |   |                            |   |  |                  |         |                         |                          |
|---|----------------|----------------------|---|----------------------------|---|--|------------------|---------|-------------------------|--------------------------|
| <b>EPA</b><br>United States Environmental Protection Agency<br>Washington, DC 20460<br><b>Work Assignment</b>   |                |                      |   |                            |   | Work Assignment Number<br>1-07   |                  |         |                         |                          |
|   |                |                      |   |                            |   | <input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number:<br>000001 |                  |         |                         |                          |
| Contract Number<br>EP-D-11-006  |                |                      | Contract Period   04/29/2011   To   03/28/2012<br>Base <input checked="" type="checkbox"/> Option Period Number |                            |   | Title of Work Assignment/SF Site Name<br>Source Emissions Test Methods                         |                  |         |                         |                          |
| Contractor<br>EASTERN RESEARCH GROUP, INC.  |                |                      |   |                            | Specify Section and paragraph of Contract SOW |  |                  |         |                         |                          |
| Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out<br><input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding<br><input type="checkbox"/> Work Plan Approval |                |                      |   |                            |   | Period of Performance<br><br>From   09/07/2011   To   03/28/2012                               |                  |         |                         |                          |
| Comments:<br>The purpose of this work change is to change the statement of work per the attachment. This document is IAW the CMM 7.3.5.1 (D)  |                |                      |   |                            |   |  |                  |         |                         |                          |
| <input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund  |                |                      |   |                            |   |  |                  |         |                         |                          |
| Note: To report additional accounting and appropriations data use EPA Form 1900-69A.  |                |                      |   |                            |   |  |                  |         |                         |                          |
| SFO <input type="checkbox"/> (Max 2)  |                |                      |   |                            |   |  |                  |         |                         |                          |
| Line  | DCN<br>(Max 6) | Budget/FY<br>(Max 4) | Appropriation<br>Code (Max 6)   | Budget Org/Code<br>(Max 7) | Program Element<br>(Max 9)                    | Object Class<br>(Max 4)  | Amount (Dollars) | (Cents) | Site/Project<br>(Max 8) | Cost Org/Code<br>(Max 7) |
| 1   |                |                      |   |                            |   |  |                  |         |                         |                          |
| 2   |                |                      |   |                            |   |  |                  |         |                         |                          |
| 3   |                |                      |   |                            |   |  |                  |         |                         |                          |
| 4   |                |                      |   |                            |   |  |                  |         |                         |                          |
| 5   |                |                      |   |                            |   |  |                  |         |                         |                          |
| Authorized Work Assignment Ceiling  |                |                      |   |                            |   |  |                  |         |                         |                          |
| Contract Period:  |                | Cost/Fee:            |   |                            |   | LOE: 150   |                  |         |                         |                          |
| 04/29/2011 To 03/28/2012  |                |                      |   |                            |   |  |                  |         |                         |                          |
| This Action:  |                |                      |   |                            |   | 0  |                  |         |                         |                          |
|   |                |                      |   |                            |   |  |                  |         |                         |                          |
| Total:  |                |                      |   |                            |   | 150  |                  |         |                         |                          |
| Work Plan / Cost Estimate Approvals   |                |                      |   |                            |   |  |                  |         |                         |                          |
| Contractor WP Dated:  |                |                      |   | Cost/Fee:                  |   | LOE:   |                  |         |                         |                          |
| Cumulative Approved:  |                |                      |   | Cost/Fee:                  |   | LOE:   |                  |         |                         |                          |
| Work Assignment Manager Name   Jason Dewees<br><br><div style="display: flex; justify-content: space-between;"> <div>_____<br/>(Signature)</div> <div>_____<br/>(Date)</div> </div>   |                |                      |   |                            |   | Branch/Mail Code:<br>Phone Number   919-541-9724<br>FAX Number:                                |                  |         |                         |                          |
| Project Officer Name   Margaret Dougherty<br><br><div style="display: flex; justify-content: space-between;"> <div>_____<br/>(Signature)</div> <div>_____<br/>(Date)</div> </div>   |                |                      |   |                            |   | Branch/Mail Code:<br>Phone Number: 919-541-2344<br>FAX Number:                                 |                  |         |                         |                          |
| Other Agency Official Name<br><br><div style="display: flex; justify-content: space-between;"> <div>_____<br/>(Signature)</div> <div>_____<br/>(Date)</div> </div>  |                |                      |   |                            |   | Branch/Mail Code:<br>Phone Number:<br>FAX Number:  |                  |         |                         |                          |
| Contracting Official Name   Rodney-Daryl Jones<br><br><div style="display: flex; justify-content: space-between;"> <div>_____<br/>(Signature)</div> <div>_____<br/>(Date)</div> </div>  |                |                      |   |                            |   | Branch/Mail Code:<br>Phone Number: 919-541-3112<br>FAX Number:                                 |                  |         |                         |                          |

## Statement of Work

- I.     **Title: Support for Source Emissions Test Methods**  
          **Contractor Name: ERG**  
          **Contract #: EP-D-11-006**  
          **WA #: 1-07 Change 1**

### IV.    TASKS

Task 1 of this work assignment involves support for regulatory development of measurement procedures for Hazardous Air Pollutants. The goal is to limit risks to the public from exposure to 188 hazardous air pollutants (HAPs) that are listed in the CAA. The maximum achievable control technology (MACT) standards have been published for almost all source categories. EPA continues to revise MACT standards and to include residual risk standards which are designed to reduce any unacceptable public health risks from major sources. Stationary facilities including refineries and chemical industries include both ducted sources and area or fugitive sources that contribute to the mixture of toxic air pollutants found in urban air sheds. The focus of Task 1 is evaluation of a method to measure fugitive and area source emissions at facility fencelines.

#### Task 1

The Contractor shall initiate and coordinate the technical activities of the staff assigned to this project. The contractor shall prepare a work plan describing the technical approach for each of the tasks in this work assignment. In addition, the contractor shall provide a cost and labor estimate for the total work assignment and the cost and labor required to complete each of the work assignment tasks. The contractor shall plan for monthly technical conference calls to brief the WAM and EPA team on progress or issues to complete each task. The Contractor shall provide monthly reports to the EPA contracting officer representative (COR) for this work assignment (WA). Monthly progress reports are required by the contract deliverables and must contain a summary of technical progress and work assignment resource use (labor and cost) information as required by the contract.

#### Task 1 Deliverables:

1.     Work Plan
2.     Monthly Progress Reports

#### Task 2

The contractor shall review and comment on an EPA provided QAPP covering sorbent tube preparation, passive sorbent tube sample collection to measure ~~benzene~~ **1,3 butadiene and benzene** exposure and round robin laboratory analysis of sorbent tube samples. Quality Assurance Project Plan (QAPP) will be prepared and provided by EPA covering all the operations necessary to conduct a study to assess the ability of commercial laboratories to follow Draft Method ~~XX~~ **Method 325** and analyzes passive sorbent tube samples for ~~benzene~~ **1,3 butadiene and benzene**; these operations will include sorbent tube preparation, sorbent tube ~~benzene~~ **1,3 butadiene and benzene** exposure, and a round robin lab analysis. The contractor shall be mainly responsible for task associated with the round robin analysis as described in more detail below. The contractor shall provide the summary of comments in word using the track changes and comments features in Microsoft Word.

## Task 2 Deliverables:

1. Review comments and recommendations of project QAPP.

## Task 3

Contractor shall identify the North American commercial environmental laboratories capable of the analysis procedure provided under Task 2. Contractor shall provide a letter report and table describing how many laboratories are able to perform the sorbent tube preparation and the sample analysis described in Draft ~~Method XX~~ **Method 325**. The report must contain but is not limited to:

- Legal Name and address of available laboratories,
- a description of the laboratory equipment used for this method,
- the analysis capacity in samples per day,
- the estimated detection limit (ug/tube) for each compounds.
- cost per tube preparation including the cost of media,
- cost per sample for analysis of a single component, (i.e., ~~benzene~~ **1,3 butadiene and benzene**) and
- cost per tube for analysis of a comprehensive list of air toxics such as found Table X of Draft ~~Method XX~~ **Method 325**

## Task 3 deliveables:

1. Contractor shall provide a letter report and table describing how many laboratories are able to perform the sorbent tube preparation and the sample analysis described in Draft ~~Method XX~~ **Method 325**.

## Task 4

Contractor shall provide round robin analysis support of approximately 45 sorbent tubes for ~~benzene~~ **1,3 butadiene and benzene**. The ~~benzene~~ **1,3 butadiene and benzene** tube analysis will be done by a minimum of 3 laboratories (if available) to assess the method performance of Draft ~~Method XX~~ **Method 325**.

EPA will provide ~~clean conditioned~~ sorbent tubes for this Task. **The contractor shall clean condition the tubes according to Draft Method 325. The contractor** EPA shall provide prepare passive sorbent tube blanks, mid and high level spikes and “Other” ambient concentration tubes for Contractor shipment to analysis laboratories. **The contractor shall use a exposure chamber that has been previously characterized to expose the tubes homogeneously in batches of 9 to a known mid and high level spike with known ambient conditions (relative humidity and temperature). The specific concentration will be given through technical directive.** The contractor shall collect the ambient exposure round robin samples (9 tubes for the ambient ~~benzene~~ **1,3 butadiene and benzene** concentration level). The contractor shall be responsible for shipment and return of sorbent tubes.

The contractor shall also provide a clean evacuated canister and veriflow or equivalent sampling system and collect a TO-15 sample collected at ambient concentration simultaneous with the exposure of the ambient passive sorbent tubes. Contractor shall analyze this canister sample within 30 days of collection for ~~benzene~~ **1,3 butadiene and benzene** following the Contractors SOP for method TO-15.

The contractor shall also supply clean evacuated SUMMA canisters and veriflow or equivalent sampling systems for mid and high level sample collection by EPA. Contractor shall analyzed these 2 canisters samples for ~~benzene~~ **1,3 butadiene and benzene** within 30 days of collection following the Contractors SOP for method TO-15.

The laboratories should provide full laboratory narratives with raw data and excel summaries. Laboratory narratives should include any comments, suggestions or request for clarification of the Draft ~~Method XX~~ **Method 325**. Contractor shall provide a letter report with a summary of the lab results and delivery of all raw and electronically available data.

The round robin experimental matrix will include 3 replicates of the sample type. EPA anticipates shipping two types of samples in shipment batch 1 and 2 for a total of 6 samples per laboratory per shipment and one batch in shipment batch 3 as shown in Table 1. These sample types correspond to zero, ambient, mid-spiked, high-spiked and “other.” Laboratories must follow Draft ~~Method XX~~ **Method 325** and report any deviations that are customary or required for their laboratory to complete the analysis.

The contractor shall summarize the results of the round robin tests in a letter report that shall include, but not be limited to:

- A narrative that describes the experimental design and samples supplied for the round robin laboratory tests.
- A table summarizing the laboratory results for all samples and:
  - The average value for replicate samples supplied to each laboratory.
  - The precision demonstrated by each laboratory as measured by the standard deviation of three analyses of each sample type,
  - The bias for mid and high level spiked sample analysis as compared to the canister analysis performed by the contractor and,
  - The accuracy of the mid and high level spiked sample analysis as compared to the known spike concentration supplied by EPA.
- An appendix with the original round robin laboratory test results including raw and electronic data from each analysis batch,
- An appendix containing the contractors TO-15 analysis raw results

#### Task 4 deliverables

1. A letter report summarizing the results of the round robin laboratory analyses as described required for Task 4.

Table 1. Shipping and experimental matrix for passive sorbent laboratory evaluation

| Batch |   | EPA                           | Contractor  | Laboratory A              | Laboratory B              | Laboratory C              |
|-------|---|-------------------------------|---|---------------------------|---------------------------|---------------------------|
| 1     | <b>Zero (Blank)</b>   | Supplies Tubes to Contractor  | <b>Blanks Tubes.</b> Supplies Tubes to laboratories A,B,C.  | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| 1     | <b>Mid range spike exposed sample (~1-5 ppb/24 hr)</b>                    | Supplies Tubes to Contractor. | <b>Blanks and exposes tubes.</b> TO-15 sample equipment to EPA, TO-15 analysis. Ships tubes to laboratories A,B,C. <b>Collects TO-15 Sample</b> | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| 2     | <b>Ambient exposed sample (Contractor field collection)</b>               | Supplies Tubes to Contractor  | <b>Blanks and exposes tubes.</b> TO-15 and tube sampling and TO-15 analysis. Ships tubes to laboratories A,B,C. <b>Collects TO-15 Sample</b>    | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| 2     | <b>High Range Spike exposed sample (~25ppb/24hr)</b>                      | Supplies Tubes to Contractor. | <b>Blanks and exposes tubes.</b> TO-15 sample equipment to EPA, TO-15 analysis. Ships tubes to laboratories A,B,C. <b>Collects TO-15 Sample</b> | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |
| 3     | <b>Other exposed sample (EPA field collection, unknown concentration)</b> | Supplies Tubes to Contractor. | <b>Blanks tubes.</b> Ships tubes to laboratories A,B,C.   | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes | Analysis of Sorbent Tubes |

V. SCHEDULE OF DELIVERABLES

| Task | Activity   | Date  | Comments |
|------|--|---|----------|
| 1    | Work Plan<br><br>Provide Monthly Progress Reports  | Within 20 days of work assignment effective date.<br><br>By the 15 <sup>th</sup> of the following month | NA       |
| 2    | Review and comment on EPA provided QAPP  | 2 weeks after receipt of QAPP   |          |
| 3    | Letter report summarizing available labs for passive sorbent tube analysis.  | 4 weeks after completion of work plan   |          |
| 4    | A letter report and appendicies summarizing the results of the round robin laboratory analyses as described required for Task 4. | 2 weeks after receipt of final analyses from round robin laboratories.                                  |          |

|   |                |   |                               |                            |  |  |                  |         |                         |                          |
|---|----------------|---|-------------------------------|----------------------------|--|--|------------------|---------|-------------------------|--------------------------|
| <b>EPA</b><br>United States Environmental Protection Agency<br>Washington, DC 20460<br><b>Work Assignment</b>   |                |   |                               |                            |  | Work Assignment Number<br>1-07   |                  |         |                         |                          |
|   |                |   |                               |                            |  | <input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number:<br>000002 |                  |         |                         |                          |
| Contract Number<br>EP-D-11-006  |                | Contract Period   04/29/2011   To   03/28/2012                |                               |                            |  | Title of Work Assignment/SF Site Name  |                  |         |                         |                          |
|   |                | Base <input checked="" type="checkbox"/> Option Period Number |                               |                            |  | Source Emissions Test Methods  |                  |         |                         |                          |
| Contractor<br>EASTERN RESEARCH GROUP, INC.  |                |   |                               |                            | Specify Section and paragraph of Contract SOW                    |  |                  |         |                         |                          |
| Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out<br><input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding<br><input type="checkbox"/> Work Plan Approval |                |   |                               |                            | Period of Performance<br><br>From   09/07/2011   To   03/28/2012 |  |                  |         |                         |                          |
| Comments:<br>The work plan dated 11/08/11 has been reviewed and we concur with the labor mix, technical hours (344), ODCs, total estimated cost \$56.269 and completion date 03/31/12 as specified. This document is IAW the CMM 7.3.5.1 (D)                      |                |   |                               |                            |  |  |                  |         |                         |                          |
| <input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund  |                |   |                               |                            |  |  |                  |         |                         |                          |
| Note: To report additional accounting and appropriations data use EPA Form 1900-69A.  |                |   |                               |                            |  |  |                  |         |                         |                          |
| SFO <input type="checkbox"/><br>(Max 2)   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Line  | DCN<br>(Max 6) | Budget/FY<br>(Max 4)  | Appropriation<br>Code (Max 6) | Budget Org/Code<br>(Max 7) | Program Element<br>(Max 9)                                       | Object Class<br>(Max 4)  | Amount (Dollars) | (Cents) | Site/Project<br>(Max 8) | Cost Org/Code<br>(Max 7) |
| 1   |                |   |                               |                            |  |  |                  |         |                         |                          |
| 2   |                |   |                               |                            |  |  |                  |         |                         |                          |
| 3   |                |   |                               |                            |  |  |                  |         |                         |                          |
| 4   |                |   |                               |                            |  |  |                  |         |                         |                          |
| 5   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Authorized Work Assignment Ceiling  |                |   |                               |                            |  |  |                  |         |                         |                          |
| Contract Period:  |                | Cost/Fee:   |                               |                            |  | LOE: 0   |                  |         |                         |                          |
| 04/29/2011   To   03/28/2012  |                |   |                               |                            |  |  |                  |         |                         |                          |
| This Action:  |                |   |                               |                            |  | 344  |                  |         |                         |                          |
|   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Total:  |                |   |                               |                            |  | 344  |                  |         |                         |                          |
| Work Plan / Cost Estimate Approvals   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Contractor WP Dated:  |                |   |                               | Cost/Fee:                  |  | LOE:   |                  |         |                         |                          |
|   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Cumulative Approved:  |                |   |                               | Cost/Fee:                  |  | LOE:   |                  |         |                         |                          |
|   |                |   |                               |                            |  |  |                  |         |                         |                          |
| Work Assignment Manager Name   Jason Dewees   |                |   |                               |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |   |                               |                            |  | Phone Number   919-541-9724  |                  |         |                         |                          |
| _____<br>(Signature)                      (Date)  |                |   |                               |                            |  | FAX Number:  |                  |         |                         |                          |
| Project Officer Name   Margaret Dougherty   |                |   |                               |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |   |                               |                            |  | Phone Number: 919-541-2344   |                  |         |                         |                          |
| _____<br>(Signature)                      (Date)  |                |   |                               |                            |  | FAX Number:  |                  |         |                         |                          |
| Other Agency Official Name  |                |   |                               |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |   |                               |                            |  | Phone Number:  |                  |         |                         |                          |
| _____<br>(Signature)                      (Date)  |                |   |                               |                            |  | FAX Number:  |                  |         |                         |                          |
| Contracting Official Name   Rodney-Daryl Jones  |                |   |                               |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |   |                               |                            |  | Phone Number: 919-541-3112   |                  |         |                         |                          |
| _____<br>(Signature)                      (Date)  |                |   |                               |                            |  | FAX Number:  |                  |         |                         |                          |

|   |                |                      |   |                            |  |  |                  |         |                         |                          |
|---|----------------|----------------------|---|----------------------------|--|--|------------------|---------|-------------------------|--------------------------|
| <b>EPA</b><br>United States Environmental Protection Agency<br>Washington, DC 20460<br><b>Work Assignment</b>   |                |                      |   |                            |  | Work Assignment Number<br>1-07   |                  |         |                         |                          |
|   |                |                      |   |                            |  | <input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number:<br>000003 |                  |         |                         |                          |
| Contract Number<br>EP-D-11-006  |                |                      | Contract Period 04/29/2011 To 03/28/2013                      |                            |  | Title of Work Assignment/SF Site Name  |                  |         |                         |                          |
|   |                |                      | Base <input checked="" type="checkbox"/> Option Period Number |                            |  | Source Emissions Test Methods  |                  |         |                         |                          |
| Contractor<br>EASTERN RESEARCH GROUP, INC.  |                |                      |   |                            | Specify Section and paragraph of Contract SOW              |  |                  |         |                         |                          |
| Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out<br><input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding<br><input type="checkbox"/> Work Plan Approval |                |                      |   |                            | Period of Performance<br><br>From 09/07/2011 To 03/28/2012 |  |                  |         |                         |                          |
| Comments:<br>The work plan dated 02/14/12 has been reviewed and we concur with the labor mix, technical hours (246), ODCs, total estimated cost \$25,090 and completion date 03/26/12. This document is IAW the CMM 7.3.5.1(D)                                    |                |                      |   |                            |  |  |                  |         |                         |                          |
| <input type="checkbox"/> Superfund    Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund  |                |                      |   |                            |  |  |                  |         |                         |                          |
| Note: To report additional accounting and appropriations date use EPA Form 1900-69A.  |                |                      |   |                            |  |  |                  |         |                         |                          |
| SFO <input type="checkbox"/> (Max 2)  |                |                      |   |                            |  |  |                  |         |                         |                          |
| Line  | DCN<br>(Max 6) | Budget/FY<br>(Max 4) | Appropriation<br>Code (Max 6)                                 | Budget Org/Code<br>(Max 7) | Program Element<br>(Max 9)                                 | Object Class<br>(Max 4)  | Amount (Dollars) | (Cents) | Site/Project<br>(Max 8) | Cost Org/Code<br>(Max 7) |
| 1   |                |                      |   |                            |  |  |                  |         |                         |                          |
| 2   |                |                      |   |                            |  |  |                  |         |                         |                          |
| 3   |                |                      |   |                            |  |  |                  |         |                         |                          |
| 4   |                |                      |   |                            |  |  |                  |         |                         |                          |
| 5   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Authorized Work Assignment Ceiling  |                |                      |   |                            |  |  |                  |         |                         |                          |
| Contract Period:  |                | Cost/Fee:            |   |                            |  | LOE: 344   |                  |         |                         |                          |
| 04/29/2011 To 03/28/2013  |                |                      |   |                            |  |  |                  |         |                         |                          |
| This Action:  |                |                      |   |                            |  | -98  |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Total:  |                |                      |   |                            |  | 246  |                  |         |                         |                          |
| Work Plan / Cost Estimate Approvals   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Contractor WP Dated:  |                |                      |   | Cost/Fee:                  |  | LOE:   |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Cumulative Approved:  |                |                      |   | Cost/Fee:                  |  | LOE:   |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Work Assignment Manager Name Jason Dewees   |                |                      |   |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |                      |   |                            |  | Phone Number 919-541-9724  |                  |         |                         |                          |
|   |                |                      |   |                            |  | FAX Number:  |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Project Officer Name Margaret Dougherty   |                |                      |   |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |                      |   |                            |  | Phone Number: 919-541-2344   |                  |         |                         |                          |
|   |                |                      |   |                            |  | FAX Number:  |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Other Agency Official Name  |                |                      |   |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |                      |   |                            |  | Phone Number:  |                  |         |                         |                          |
|   |                |                      |   |                            |  | FAX Number:  |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |
| Contracting Official Name Rodney-Daryl Jones  |                |                      |   |                            |  | Branch/Mail Code:  |                  |         |                         |                          |
|   |                |                      |   |                            |  | Phone Number: 919-541-3112   |                  |         |                         |                          |
|   |                |                      |   |                            |  | FAX Number:  |                  |         |                         |                          |
|   |                |                      |   |                            |  |  |                  |         |                         |                          |